



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,787	04/02/2004	Takashi Iwamoto	26082	9932
20529	7590	07/11/2007		
NATH & ASSOCIATES 112 South West Street Alexandria, VA 22314			EXAMINER LEUNG, CHRISTINA Y	
			ART UNIT 2613	PAPER NUMBER
			MAIL DATE 07/11/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

5

<b>Office Action Summary</b>	<b>Application No.</b> 10/815,787	<b>Applicant(s)</b> IWAMOTO ET AL.	
	<b>Examiner</b> Christina Y. Leung	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2 and 5-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-7 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 5-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kanda** (US 6,091,528 A) in view of **Robbins et al.** (US 7,194,209 B1).

Regarding claims 5-7, Kanda discloses an optical wireless transmission apparatus (Figures 1-3) comprising:

a light emitting device (light transmitting section 38) that emits a data signal light obtained by modulating a data signal;

a first lens 35 that shapes the data signal light emitted from the light emitting device into approximately parallel beams;

a beam splitter 24 that reflects a part of an incoming light and transmits a remainder thereof;

an optical reflection system (tracking mirror 23) having a reflection plate that reflects an incoming light and a driving section (drive controlling section 34) that changes a deflection angle of the reflection plate with respect to an axis of the incoming light;

a second lens 25 that condenses a data signal light and a pilot light transmitted from a target apparatus;

a light receiving device (light receiving section 26) that receives the data signal light and the pilot light transmitted from the target apparatus and condensed by the second lens; and

a pilot light emitting section (beacon light emitting section 46) provided ahead of the beam splitter and the optical reflection system and close to a path of the data signal light emitted from the light emitting device and reflected by the beam splitter and the data signal light and the pilot light transmitted from the target apparatus, the pilot light emitting section emitting the pilot signal toward the target apparatus,

wherein the data signal light emitted from the light emitting device 38 is shaped into approximately parallel beams by the first lens 35, transmitted through the beam splitter 24, reflected into a predetermined direction by the optical reflection system 23, and transmitted toward the target apparatus, the pilot light emitted from the pilot light emitting section 46 is transmitted directly toward the target apparatus not via the beam splitter 24 and the optical reflection system 23, and the data signal light and the pilot light transmitted from the target apparatus is reflected by the optical reflection system 23, reflected by the beam splitter 24, transmitted through the second lens 25, and received by the light receiving device 26 (column 4, lines 13-67; column 5, lines 1-60).

Regarding claims 5-7, Kanda does not specifically disclose that a wavelength region of the pilot light ranges from 930 nm to 960 nm. Regarding claims 5 and 7 in particular, Kanda also does not specifically disclose that the light receiving device has a light receiving sensitivity only in a wavelength region of 930 nm to 960 nm, and regarding claims 6 and 7 in particular, Kanda also does not specifically disclose a filter that passes only a light in a wavelength region of 930 nm to 960 nm.

Art Unit: 2613

However, Robbins et al. teach a system that is related to the one disclosed by Kanda including an optical wireless transmission apparatus (Figure 2). They further teach using a wavelength region between 930 nm and 960 nm and providing a filter 3 and a light receiving device 110 having a light receiving sensitivity only in a wavelength region of 930 nm to 960 nm (column 4, lines 38-67; column 5, lines 1-45).

Regarding claims 5-7, it would have been obvious to a person of ordinary skill in the art to use and receive a wavelength region between 930 nm and 960 nm as taught by Robbins et al. in the system disclosed by Kanda in order to advantageously reduce the interference from sunlight or other ambient light conditions and thereby more clearly receive the signals from the target apparatus (Robbins et al., column 5, lines 20-25).

3. **Claims 5-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mok et al.** (US 2004/0208595 A1) in view of **Robbins et al.** (US 7,194,209 B1).

Regarding claims 5-7, Mok et al. disclose an optical wireless transmission apparatus (Figure 5) comprising:

- a light emitting device (data optical source 71) that emits a data signal light obtained by modulating a data signal;

- a first lens 72 that shapes the data signal light emitted from the light emitting device into approximately parallel beams;

- a beam splitter (cold mirror 61) that reflects a part of an incoming light and transmits a remainder thereof;

Art Unit: 2613

an optical reflection system (including scan mirror 60) having a reflection plate that reflects an incoming light and a driving section (tracking system 67) that changes a deflection angle of the reflection plate with respect to an axis of the incoming light;

a second lens 63 that condenses a data signal light and a pilot light transmitted from a target apparatus;

a light receiving device (video imager 68) that receives the data signal light and the pilot light transmitted from the target apparatus and condensed by the second lens; and

a pilot light emitting section (beacon 50) provided ahead of the beam splitter and the optical reflection system and close to a path of the data signal light emitted from the light emitting device and reflected by the beam splitter and the data signal light and the pilot light transmitted from the target apparatus, the pilot light emitting section emitting the pilot signal toward the target apparatus,

wherein the data signal light emitted from the light emitting device 71 is shaped into approximately parallel beams by the first lens 72, transmitted through the beam splitter 61, reflected into a predetermined direction by the optical reflection system 60, and transmitted toward the target apparatus, the pilot light emitted from the pilot light emitting section 50 is transmitted directly toward the target apparatus not via the beam splitter 61 and the optical reflection system 60, and the data signal light and the pilot light transmitted from the target apparatus is reflected by the optical reflection system 60, reflected by the beam splitter 61, transmitted through the second lens 63, and received by the light receiving device 66 (pages 2-3, paragraphs [0038]-[0046])

Further regarding claims 6 and 7 in particular, Mok et al. also disclose a filter (interference filter 65) passing only a light in a wavelength region corresponding to the pilot light provided ahead of the optical reflection system receiving the data signal light and the pilot light transmitted from the target apparatus.

Regarding claims 5-7, Mok et al. do not specifically disclose that a wavelength region of the pilot light ranges from 930 nm to 960 nm, and regarding claims 5 and 7 in particular, Mok et al. do not specifically disclose that the light receiving device has a light receiving sensitivity only in a wavelength region of 930 nm to 960 nm.

However, Robbins et al. teach a system that is related to the one disclosed by Mok et al. including an optical wireless transmission apparatus (Figure 2). They further teach using a wavelength region between 930 nm and 960 nm and providing a light receiving device 110 having a light receiving sensitivity only in a wavelength region of 930 nm to 960 nm (column 4, lines 38-67; column 5, lines 1-45).

Regarding claims 5-7, it would have been obvious to a person of ordinary skill in the art to use and receive a wavelength region between 930 nm and 960 nm as taught by Robbins et al. in the system disclosed by Mok et al. in order to advantageously reduce the interference from sunlight or other ambient light conditions and thereby more clearly receive the signals from the target apparatus (Robbins et al., column 5, lines 20-25).

***Allowable Subject Matter***

4. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2613

5. The following is a statement of reasons for the indication of allowable subject matter:

The prior art, including Kanda, Mok et al., and Robbins et al., does not specifically disclose or fairly suggest a system including all of the elements and limitations in combination as recited in claim 2 (and including all of the limitations of claim 5 on which the claim depends), particularly wherein the light receiving device comprises: a light receiving layer formed of GaInAsP having a band gap energy corresponding to 960 nm on an InP substrate; and a light absorbing layer formed of GaInAsP having a band gap energy corresponding to 930 nm on the light receiving layer.

***Response to Arguments***

6. Applicant's arguments filed 09 April 2007 with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,



Art Unit: 2613

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

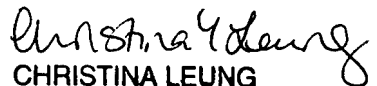
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023.

The examiner can normally be reached on Monday to Friday, 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
CHRISTINA LEUNG  
PRIMARY EXAMINER